

REMARKS/ARGUMENTS

Claims 22 and 23 have been canceled. Claims 18-21 and 24-35 are active in the case.
Reconsideration is respectfully requested.

The present invention relates to a method of producing light polarizing films.

Claim Amendments

Claims 18 has been amended by placing the limitation of Claim 23 therein.
Accordingly, the amendment that has been made to Claim 18 does not raise new issues after the final Action and entry of the new claims into the record is respectfully requested.

Invention

As now amended, the present invention is directed to a continuous method for producing polarizing films by monoaxially stretching a polyvinyl alcohol film having a width of at least 2 m in an aqueous boric acid solution. It is important that the draw ratio of the film in the boric acid solution be at least 5 times. The polyvinyl alcohol film is stretched in the bath or solution under the following conditions:

$$A \geq 5 \text{ (m)} \quad (1)$$

$$A/B \geq 0.5 \text{ (min)} \quad (2)$$

wherein A indicates the stretching distance (m), and B indicates the stretched film speed (m/min).

Prior Art Rejection

Claims 18-35 stand rejected based on 35 USC 103(a) as obvious over Racich et al, U. S. Patent 4,591,512 in view of Sanefuji et al, U. S. Patent Publication 2002/0001700. This ground of rejection is respectfully traversed.

It is true that the Racich et al patent discloses a method of forming or producing which is said in the summary of the invention in column 1 to comprise the two steps of staining a uniaxially stretched sheet of PVA by immersion of the stretched sheet in an iodine bath and then further stretching the stained sheet in substantially the same direction while it is being treated with a borating solution containing a zinc salt. However, as applicants have stated previously, it is clear that the Racich et al patent in column 2, teaches that the a requirement of the process of the patent is that a sheet of PVA must be employed as the starting sheet material that has been uniaxially stretched under the conditions stated in column 2, lines 26 to 43. The initial stretching that is accomplished is done in hot oven air at a temperature of about 125° C to between about 2.5 to 4 times its normal dimensions. This dry stretching that occurs is an initial stretch that in no way is equivalent to the stretching that occurs of the film in the second step borating bath of the process of the reference.

Also with respect to the dry stretching that is taught in column 2, note that patentee states that a sheet having an initially 0.046 mm thick, 940 mm wide, PVA sheet stretched to approximately 3.6 times its normal dimensions reaches a thickness of about 0.025 mm and a width of about 533 mm. The patent states that in a preferred embodiment where it is desired to make the highest efficiency polarizer material that has a uniformity of orientation, an about 254 mm wide strip is taken from the center of the sheet and used in further processing (col 2, lines 35-43). As to this stated preferred sheet size, it should be observed that the present specification states that when PVA films that have a width of at least 2 m are stretched in an ordinary manner, the polarizing properties of the resulting films are inferior to those polarizing films that have a narrower width. As a whole, the technology of stretching a PVA film having a width of at least 2 m was not known at the time of the invention of Racich et al. Thus, no matter how one tries to extend the width of PVA films for final use as a polarizer, such can not be done unless one manages to find a solution.

Applicants again emphasize that there is absolutely no teaching or suggestion of conducting the monoaxial stretching of a PVA film in an aqueous boric acid bath where the stretching distance (meters) of the PVA film is at least 5 (requirement A) and the stretched film speed (B) in units of meters/min over a roller is such that the value of the ratio of A (stretching distance) to B (film speed) must be equal to or greater than 0.5 (min). In fact, the A/B ratio of the present claims is not met by the disclosure of the patent at column 4, lines 25-31. Accordingly, applicants submit that the cited reference clearly does not suggest the present invention.

The disclosure of Sanefuji et al is clearly of secondary importance, because it discloses polarizing films that are obtained from PVA films. However, the key feature of the reference for the processing of a film of PVA into a light polarizing film is that the polarizing film is obtained by casting a film material onto a drum, whereby the film that is obtained has a thickness within the range of 20 to 150 μm and a width of at least 2 m. The patent in paragraph [0030] teaches the use of a film having a width of at least 2 m in monoaxial stretching, not only in wet stretching operations, but also dry stretching operations. However, just as in the case of the Racich et al patent, there is no teaching or suggestion of the specific limitations of the present claims therein. Accordingly, the present invention is clearly patentably distinguished over the combined prior art and withdrawal of the obviousness ground of rejection is respectfully requested.

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It is believed that the application is in condition for allowance. Early notice to this effect is earnestly solicited.

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Respectfully submitted,

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A handwritten signature in cursive script, reading "FD Vastine", written over a horizontal line.

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